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PAPERS
IN
AGRICULTURE.

No. I.

CULTURE OF THE CAMBRIDGESHIRE FENS.

The Thanks of the Society were voted to GEORGE AIKIN, *Esq. of Cook's Court, Carey Street, for the following Account of the recent Improvements in the Culture of the Cambridgeshire Fens.*

IN the Preface to Part II. of Vol. LI. of the *Transactions of the Society*, noticing Mr. Glynn's paper "On Draining the Fens in Cambridgeshire and Lincolnshire by Steam-engines," a conjecture is hazarded, that "the time is probably not far distant when all the fen-lands in the kingdom shall be enabled to exert their native exuberant fertility." So far as the fens of the *Bedford Level* are concerned, this conjecture is being rapidly verified; the more complete and certain system of drainage by means of the steam-engine, as well as the great improvement of the outfall, having enabled the occupiers of the land to avail themselves of the valuable strata of clay and marl, which are now accessible at a very short depth from the surface, and by which a new and most advantageous system of farming has been introduced.

As some account of this new method may be interesting to such members of the Society as are acquainted with agricultural pursuits, I have endeavoured to collect some information on the subject, which I now with great deference submit to the Society.

The practice of using clay and marl upon fen or *moss* land in other parts of the kingdom, especially in Scotland, has been in use for many years, and their good effect has been fully appreciated; as may be seen in Mr. Steel's excellent work on the subject;* the mode of practice laid down there, however, being somewhat different from that in use here, it will not preclude any benefit which may be derived from such information as I have been able to obtain.

The soil of the fens is a dark-coloured, almost black, peat, mixed with silt, and graduates downwards into spongy peat. In many places occurs a tenacious soapy-feeling peat, mixed with micaceous sand, in which state it obtains the local name of *bear's-muck*, forming a barren untractable soil, which, by drying, becomes of a stony hardness. The peat in some parts rests on a thick stratum of blue calcareous clay, called *gault*;† but, in other parts, a deposit of gravel, varying in thickness, is found between the peat and the gault.

The great Bedford Level contains upwards of 300,000 acres, which formerly were subject to continual floods, so that the cultivation of the land was exceedingly uncertain; and, at best, it could only be worked in spring and summer. The usual course of husbandry was to pare and burn the sod, as a preparation for coleseed or rape, which was fed off by sheep, and was followed by one or two successive crops of oats, according to circumstances; and was then laid down to grass for two or three years, when it was again broken up, and the same routine of crops observed. The crops, of course, varied according to the situation of the land: where it was very low and wet, the oats rarely exceeded four or five quarters per acre, and were light in quality; but in more favourable situations, where the land was higher and stronger, the crop would be from five to eight, or even ten, quarters per acre: all this, however, depended upon the state of the land, as to being flooded or not. Fifty years ago, the drainage was very inefficient.

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* The Natural and Agricultural History of Peat Moss, or Turf Bog. By Andrew Steel, Esq. Edinburgh, 1826. Lang and Black.

† A fair sample of gault was found to contain 30·7 per cent of carbonate of lime: the carbonic acid given off from it by the action of acids, had nearly the same kind of unpleasant odour as that from fetid limestone or swinestone.

The outfall for the waters having been much improved by forming the *Eau Brink Cut;* by scouring out and deepening the Hundred-foot River, which communicates with the Eau Brink, and conveys the upland waters of the river Ouse more directly to sea; also, by scouring out and deepening the river Nene and other main drains, and by the introduction of the steam-engine, the drainage has become so complete, that the land is now esteemed almost *certain* from being injured by floods: the consequence of this has been a new system of farming, and the general introduction of wheat crops, and the practice of *claying or marling the land.* This complete drainage has enabled the farmers to dig for these earths with success; and the benefit arising from their being laid on the land, is as great as that effected on the light sand lands of Norfolk, and by the same means.

Where formerly an uncertain crop of very inferior oats was grown, and in many cases left on the ground, the farmers being unable to get them off from the rise of the waters; now, from the use of clay, they grow excellent crops of *wheat* and of oats of a very superior quality. The land is also much improved and kept in heart by the *manure* they are now enabled to put upon it; for formerly a *fen* farmer never thought of using manure, which, indeed, he could not often get upon the land if he were inclined so to do. Instead of the former course of pare and burn for coleseed, and then oats, oats and grass, the present mode is, in the first instance, to pare and burn for coleseed, then oats, *wheat*, *clover*, *wheat*, and *fallow for coleseed*, with occasionally a crop of beans, which is exceedingly productive; so that the old mode of paring and burning every five or six years is now very generally going out of use where the lands are clayed. Another advantage from this new mode is found in the land being less obnoxious to the ravages of the *wire-worm:* where the fen-land has not been clayed, and at the same time lies dry (*drummy*), the wire-worm abounds to the serious injury of the farmer; but it has been found that the worm does not so much infest the land where it is made heavier, and more consolidated, by the clay.

The mode of claying the land is as follows: —

Trenches are formed the length of the piece of land, 7 feet long, and 30 inches wide at the surface: they are dug sloping down to the clay, where they are 8 feet long by 4 feet wide; the clay is taken out *two spits* deep, of about 14 inches each, and thrown on the land on either side. When the first trench is finished, another is begun, and so on, leaving a heading between each trench of from 30 to 36 inches. When the line of trenches is completed, another is commenced at the distance of from 12 to 20 yards, according to the quantity of clay intended to be laid on the land; but the general quantity is about 200 cubic yards per acre. A pit of the dimensions above stated, viz. 8 feet by 4 feet, and 2 spits of 14 inches, or 2 feet 4 inches, will contain 74 feet 8 inches, or about 2¾ yards.

The depth at which the clay is found varies considerably: in some places it is touched by the plough, and so on from 2, 3, to 8 feet. The expense per acre of course varies according to the depth of the pit, and the quantity laid on the land, from 50*s*. to 70*s*. A very great advantage attending this mode is the saving of expense, *no horses and carts being required.* From the peculiar nature of the fen earth, these trenches are soon ploughed in, and no traces left of them.

It has been stated that the course of cropping on these clayed lands is very different from what it was before claying. In addition, it may be observed that the growth of vegetable crops, such as cabbages, mangleworzel, potatoes, &c. is much increased.

December 1838. GEO. AIKIN.

No. II.

CULTIVATION OF POTATOES.

On the Cultivation of Potatoes from the Seed. By W. BUCHANAN, Esq. of Chalk Lodge, near Cheshunt.

HAVING been anxious for some years to obtain new varieties of the potato from seed, that being of course the only way of procuring them, and having succeeded